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The Scolopendridæ of the United States.

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Through the kindness of the curators of the U. S. National Museum I have had the opportunity to study its collection of Myriapoda¹ which though not a large one is especially rich in the larger centipedes of this country. Recent studies by Kohlrausch² and Meinert³ have greatly modified the subject of specific determination in this family and have reduced many of the species described by Newport, Wood, Koch, Saussure and Porath so that an extensive array of synonyms stands as the result of their labors. Characters now known to be individual have been relied on hitherto as specific, and the study of larger numbers of specimens has made in some instances sweeping reductions. As an example forty specific names now stand as synonyms of *Scolopendra morsilans*.⁴

¹ There is a division among Zoologists as to the orthography of this word. The orthography *Myriapoda* used above is in accordance with the usage of Newport, Gervais, Lucas, Wood, Meinert, L. Koch, C. Koch, Bergsoe, Porath (earlier papers), Palmberg, Ryder, Sager, Cope, Fanzago, Saussure, Humbert, Haase and De Borre. The form *Myriopoda* is used by Karsch, Latzel, Packard, Stuxberg, Butler, Harger, Peters and Porath (later papers).

² Gattungen und Arten der Scolopendriden, in *Archiv für Naturgeschichte*, 1881, 50—132.

³ Myriapoda Musei Cantabrigensis, Part I Chilopoda, in *Proceedings American Philosophical Society*, XXI, 161—233 (1885).

⁴ Of the 38 species of *Scolopendra* described by Newport in his classic (Trans. Linn. Society, 1844) only eight have not yet been reduced to synonyms. Of the 25 species described by Wood, nineteen are not now regarded as valid species and not one of the other six has been identified a second time. In the light of these facts it is the part of wisdom to move slowly in the description of new species.

The **Scolopendridæ** may be readily distinguished from all other Chilopoda in the possession of either 21 or 23 pairs of legs. The body segments being so similar the essential characters are drawn from the head and its appendages, the first body segment (*basilar segment*), and the last segment with its so-called anal legs; other characters are drawn from the spiracles, the armature of the femoral joints and of the tarsi; sexual characters have never been used in classification. A vast amount of work must be done in studying the early stages of not only this family but all other families of the Myriapoda before specific lines may be regarded as settled.

The reported occurrence of a tropical genus in the Southern States necessitates an enlargement of the synoptic table given in the first volume of this journal.⁵

The genera may be distinguished as follows:

- A.—With 23 pairs of legs, all 5–7-jointed; ocelli wanting; antennæ 17-jointed...
Scolopocryptops Newp.
 - With 21 pairs of legs **B**
- B.—With nine pairs of simple stigmata⁶ **C**
 - With ten pairs of stigmata, which are inclosed in a deepened, wrinkled, gill-like integument; antennæ 17–21-jointed **Branchiostoma** Newp.
- C.—Ocelli four each side of head; cephalic segment overlapping the first dorsal...
Scolopendra L.
 - * Ocelli inconspicuous or wanting **D**
- D.—Last dorsal scutum enlarged; prosternal teeth present; labrum one toothed...
Opisthemege Wood.
 - Last dorsal scutum, not larger than the others; prosternal teeth wanting; labrum 3–5-toothed **Cryptops** Leach.

In the following enumeration of species those represented in the National Museum are marked with an asterisk; localities from whence species are represented in the same collection are followed by a point of exclamation.

I. SCOLOPOCRYPTOPS Newp.

Seven nominal species have been described which are here reduced to three, and it is possible that two of these are separated by characters that will not prove constant.

The species may be thus distinguished:

- A.—Anal legs (except the femoral joint) more or less densely pubescent; prosternal teeth present **lanatipes** Wood.

⁵ The North American Myriapoda, Entomologica Americana, I, 141–151, (1885).

⁶ In the common *Scolopendra hros* these stigmata appear as horizontal slit-like openings above the legs on the 3rd, 5th, 8th, 10th, 12th, 14th, 16th, 18th and 20th body segments. In *Branchiostoma* the 7th segment bears stigmata in addition to those above named.

- Anal legs glabrous, armed with two spines, one within, one beneath. **B**
B.—Head suborbicular; prosternal teeth wanting, the margin straight or obscurely sinuous ***sexspinosus** Newp.
 Head subovate; prosternal teeth two; last 17 dorsal scuta margined; animal smaller **Georgicus** Mein.

DISTRIBUTION AND SYNONYMY.

Californica Humb. et Sauss. = *lanatipes* Wood.
Georgicus Meinert. Proc. Am. Phil. Soc. XXI, 180 (1885).—Georgia.
gracilis Wood = *lanatipes* Wood.
lanatipes Wood. Jour. Phila. Acad. V, 39 (1862); Trans. Am. Phil. Soc. XIII, 175 (1865).—California.
sexspinosus (Say) Newp. Trans. Lin. Soc., XIX, 407 (1845).—“Eastern U. S.” (*Wood*); Illinois! Washington, D. C.! N. Y., Pa., Iowa, Va., W. Va., Md., Mass., Ohio, Ky., Cal.
spinicauda Wood = *sexspinosus* Newp.
Scolopendropis helvola Koch = ? *sexspinosus* Newp.

II. BRANCHIOSTOMA Newp.

Only one species is reported from the United States by Saussure and Humbert.⁷

B. celer Humb. et Sauss. Revue et Mag. de Zool. 1870, 202.—Carolina, Jamaica, Nicaragua.

III. SCOLOPENDRA L., Newp.

Numerous species of this cosmopolitan genus have been described from the United States, but the number is here reduced to seven, with an additional species which cannot be recognized from its description and must stand until its type (supposed to be in Paris) can be re-studied.

The species may be distinguished as follows; (full descriptions of the species will be found in Meinert, *l. c.*, 190, *et seq.*):

- A.**—First body-segment with a well marked transverse groove. **B**
 First body-segment not grooved **D**
B.—First tarsal joint of anal legs armed with a spur; antennæ 23—30-jointed. . . **C**
 First tarsal joint of anal legs unarmed; antennæ 17-jointed; anal legs short, thick, armed with 11—12 spines, the angular process simple or bifid. **Woodii** Mein.
C.—Species large (100—150 mm. long in adults); prosternal teeth large; anal legs with 17—25 spines; antennæ 24—30-jointed. ***heros** Girard.
 Species smaller (60 mm. long); prosternal teeth small; anal legs very short, armed with 10—17 spines; antennæ 23—24-jointed. ***viridis** Say.
D.—Femora of penultimate legs spinulose distally; femora of anal legs armed with 40—60 spines, the angular process with 6—8 or more; antennæ 17-jointed. ***crudelis** Koch.

⁷ Mission Scientifique au Mexique etc. 6ième partie: Etudes sur les Myriapodes, p. 192. This work contains a valuable catalogue of American Myriapods, which was nearly complete at the date of publication, 1872.

- Femora of penultimate legs not spinulose ; spines of anal femora less numerous **E**
- E. —Femora of anal legs armed with 10–14 spines (4–6 within, 6–9 beneath, arranged in a triple series); the angular process with 3–4 spines ; antennæ 17–22-jointed ***morsitans** L.
- Femora of anal legs with 2–5 spines, the angular process simple or bifid ; antennæ 17–20-jointed..... **F**
- F. Spines of anal femora 4–5, always two beneath ***subspinipes** Leach.
- Spines of anal femora only 2, both within..... ***De Haanii** Brandt.

DISTRIBUTION AND SYNONYMY.

- bispinipes Wood = *De Haanii* Brandt.
 byssina Wood = *subspinipes* Leach.
 Californica Humb. et Sauss. = *morsitans* L.
 castaneiceps Wood = *heros* Girard.
 Copeiana Wood = *heros* Girard.

crudelis Koch. Syst. der Myriapoden, 170 (1847); Die Myriapoden, II, 36, t. LXXVII, LXXVIII (1863).—Florida, Tortugas! Key West! Hayti.

De Haanii Brandt. Recueil, 59 (1841).—California ; tropical regions generally.

heros Girard in Marcy's Exp. Red River, App. F., 243 (1853).—Florida! Louisiana! Texas! Kansas! New Mexico! Arizona! Utah! Mexico! Ga., Ala., Ky., Neb., Cal., Panama, Guatemala, Porto Rico. The report by Meinert (*l. c.*) of a specimen from Westfield, N. Y., must have arisen from an error in the label!

inaequidens Ger. vaïs. Apteres, IV, 277 (1847).—New York. This species is as yet unidentified ; the type is supposed to be in Paris.

- inaequidens* Wood = *Woodii* Mein.
 longipes Wood = *crudelis* Koch.
 marginata Say = *morsitans* L.

morsitans L., Kohlrausch. Archiv f. Naturg., 1881, 104.—West Indies! Surinam! Florida, "Southern States" (*Wood*); tropical regions generally.

- pachypus* Kohlrausch = ? *heros* Girard.
 parva Wood = *viridis* Say.
 permix Kohlrausch = ? *heros* Girard.
 polymorpha Wood = *heros* Girard.
 punctiventris Newp. = *viridis* Say.

subspinipes Leach., Kohlrausch. Archiv f. Naturg. 1881, 96.—West Indies! Surinam! Florida ; tropical and subtropical regions generally.

viridis Say. Proc. Phila. Acad. II, 110 (1821).—Lookout Mountain, Tenn.! Tortugas, Fla.! Georgia!

Woodii Meinert. Proc. Amer. Philos. Soc. XXI, 198 (1885).—Va., N. C., S. C. (*Meinert*); Illinois (*Wood*).

IV **OPISTHEMEGA** Wood.

The species are thus characterized :

- A. —Femora of anal legs armed with a spine at the internal superior angle ; antennæ 16–17-jointed, distally pubescent..... ***spinicauda** Wood.
 Femora of anal legs unarmed ; antennæ 17–18-jointed..... **B**
- B. Antennæ (except first four joints) pubescent ; anal legs very short and stout .. **crassipes** Mein.
 Antennæ not pubescent ; anal legs short, punctate ***postica** Wood.

DISTRIBUTION.

- crassipes** Meinert. Proc. Am. Phil. Soc. XXI, 209 (1885).—Va., Ky., Fla.
postica Wood. Jour. Phila. Acad. V, 35 (1862); Trans. Am. Phil. Soc. XIII, 169 (1865).—North Carolina, Virginia.
spinicauda Wood. Jour. Phila. Acad. V, 36 (1862); Trans. Am. Phil. Soc. XIII, 170 (1865).—Pennsylvania, Illinois.

V. CRYPTOPS Leach.

The species of this genus have scarcely been collected in this country. Up to the time of Wood's principal publication in 1865 two species had been described, neither of which were known to him. Wood described a third species in 1867 and Meinert a fourth in 1885. *C. hyalina* sent by Mr. Bollman is all I have seen. If the descriptions can be depended on they ought to be distinguished by the following table :

- A.—Antennæ 19-jointed.....**asperipes** Wood.
 Antennæ 17-jointed.....**B**
 B.—Third joint of anal legs armed with five spines.....**hyalina** Say.
 Anal legs unarmed.....**C**
 C.—Antennæ elongate, moniliform, the segments nearly equal, mostly smooth....
Milbertii Gervais.
 Antennæ short, thickened at base, densely hirsute.....**sulcatus** Mein.

DISTRIBUTION AND SYNONYMY.

- asperipes** Wood. Proc. Phila. Acad. 1867, 130.—Virginia.
hyalina Say. Jour. Phila. Acad. II, 111 (1821). Collected Writings (Lecônite's Ed.) II, 30.—Georgia, Florida, Indiana.
Milbertii Gervais. Apteres, IV, 592 (1847).—New Jersey.
postica Say = *Theatops postica* Newp.⁸
sexspinosa Say = *Scolopocryptops sexspinosa* Newp.
sulcatus Meinert. Proc. Am. Phil. Soc. XXI, 211 (1885).—Kentucky.

⁸ The genus *Theatops* has had a strange history and after all its vicissitudes may as well be consigned to oblivion. It was first described by Say (1821) as *Cryptops postica* from Georgia and East Florida. Newport in 1844 established the genus *Theatops* on type specimens sent by Say to Leach and deposited by him in the British Museum. Newport says "it approaches *Cryptops*, but differs from that genus in the distinctness of the ocelli and in the possession of the labial teeth." Gervais in the 4th volume of *Apteres* (1847) re-unites it to *Cryptops* and yet adds: "On devra probablement la reunie aux veritable Scolopendres." Wood in 1862 and later in 1865 quotes Newport's description, stating that he never saw a specimen of it. Latzel (1880) in the first part of his "Myriopoden der Oesterreichisch-Ungarischen Monarchie" makes it a probable synonym of *Scolopendra*, while Kohlrausch (1881) enumerates it as a valid species of *Theatops* in his "Gattungen und Arten der Scolopendriden." It thus appears that Say and Newport are all who saw specimens and their statements are opposed to each other in regard to the position of the eyes. It will probably never appear again ; at least is it not necessary to include it in future lists.